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Organizational Learning evaluation based on the Impact of the Elements of Human Capital, Relational Capital and Structural Capital

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ABSTRACT

Background: Thinking capital is a group of knowledge-based asset which is allocated to an organization and is considered as its characteristics and lead to improvement of organization competing situation significantly through increasing the key beneficiaries' value in organization. **Objective:** This article evaluates the organizational learning based on impact of elements of human, relational and structural capitals in Gas organization of Chahar mahal and Bakhtiari province. The statistical society of this article includes total employers which are more than 161 and the sampling method is non-probabilistic. **Methodology**: The research is descriptive survey from field class and data collected using the researcher made questionnaires. In this research to investigate the justifiability of the questionnaires the formal justification is used such that the questionnaires distributed between some of the related professors such as supervisors and consultants and a group of university professors and their feedback about each question was evaluated and its stability was evaluated 93% using Cronbach α and using data distribution normalization, Kolmogorov – Smirnov, correlation, hierarchical regression, ANOVA tests it was analyzed. **Results:** Results of the article show that there is direct meaningful (positive) between dimensions of thinking capital (human and structural and relational capitals) and dimensions of organizational learning (personal skills, group learning, shared view, systematic thinking and mental models) and increasing the dimensions of thinking capital leads to the increase of dimensions of organizational learning.

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INTRODUCTION

Nowadays in companies and organization the share of knowledge to other resources is increasing such that today the sustainability of activities and profitability of most of the organizations and firms depends on knowledge. Therefore, the more firms and organizations are rich in intangible assets and thinking capitals, better and faster they reach the higher levels of development. Major challenges in this area are conceptualization, understanding and evaluation of thinking capitals. Knowledge management helps organization so that they can recognize and use their abilities and capabilities in order to reach knowledge based economy. until the mid-21 century the major belief was such that the main reason for developing countries not to be developed is lack of physical and financial capitals. So developing countries attempt more to compensate their mustiness via different ways to obtain physical and financial capitals which in turn led to their more dependency and destruction of economic and political foundation. But today it is proved by experience that entrance of financial and physical capitals doesn't accelerate the trend of development in developing countries by themselves. Only the countries with strong administrative structures and efficient and expert human force are able to use efficiently and correctly their physical and financial capitals in trend of development. In today's economy wealth growth and development are mainly originated from thinking capitals and economic advances of most of the organizations is also confirming that adding value is more relying on intangible capitals than physical ones. Rapid advancement in technology especially in communication, Computer and biology engineering from 70th decade, the pattern of world economy growth has been changing completely and following that knowledge was turned to the most significant financial and physical capitals (Chen et al, 2004; 47). The future society is a knowledge based one in which storage and performance of knowledge would be the foundation of capital

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collection and economic growth. The industries in such a society rely more on knowledge and its uniformity to acquire competing advantages on management not industrial products elements (H. Su and Fang, 2009; 85).

Also these companies usually are confronted with scientific environment changes and should be tending extensively to the configuration (rearrangement) of existing knowledge or establishing new knowledge (Cheng et. all, 2008). In the present complex and fast changing world organizations can be successful that learn faster and sooner than others (Behnami, 1384: 56). If the organization can reach this goal, would be more effective and efficient than other organization in competition. The present research investigates organizational learning based on the impact of elements of human, Relational and structural capitals. All the companies and organizations in the way of growth, development and survival in intensive competitions and increasing their market shares should manage their thinking capitals effectively and use these valuable capitals to develop their activities and finally obtaining the completion advantages. To achieve this goal, the more and more considering valuable resources of knowledge and increase of organizational learning capabilities is necessary.

Components of thinking capital:

1. Human capital:

Human capital is useful for organization as employers' thinking ability or is used as employers' abilities and capabilities which is solution to customers. A human capital is the source of innovation using employers' capabilities, knowledge, skills, experiences and abilities to solve the problems in organization. Human capital is growing in 2 dimensions:

When the organization uses the things employers learnt,

When employers learn more and would be more useful for organization

2) Structural capital:

Structural capital includes working processes and systems which affects the competition (Al 1998) and includes technology transfer, communicational systems, organizational operations models and resources, database and documents such as brand, invention, copyright and other knowledge packages under the legal support. As Bontis (1998:66) says structural capital includes the mechanisms and structures of the organization that support employers in involvement of performance of organization. Knowledge is deployed all over the organization. To be useful, it needs to be managed. Structural capital in form of organizational knowledge may be viewed as stock and liquidity of firms (Stewart, 1997: 111). Scientific databases attempt to collect extensive information about organization and converting into organizational knowledge. Stoke sheets and securities are other structural capitals of organization. Databases of competitive intelligent (CI) are to organize the knowledge that helps suppliers, customers and competitors. As a matter of fact Johnson (1998:1) claims that one of the reasons make us using the knowledge management is CI. Management of structural capital can also help the acceleration of knowledge flow and increases the profitability. For example an E-working net can be in the form of structural capital and in line with knowledge flow. Establishing available knowledge via organization, structural capitals can an alternative to organizational structure.

3) Customer capital:

Regarding the statements of Eli (1998) customer capital consists of business communications with customers, suppliers and strategic partners and is being evaluated regarding the depth, length and quality of communications. Also it includes recognition of brands. Therefore the term "communication capital" is used more, too.

Types of learning:

Individual, group and organizational learning:

Individual learning means the modification of result based on the individual behavioral change (Yang, 2004). Individuals develop their personality, believes and personal habits over the time (Hult ketshen &Nickols, 2003). It means that individuals increase their knowledge and insight by experimenting and obtaining necessary information during their serving and analyzing and thinking about the information obtained or in the other word they learn individually. When people exchange their experiences and information or think in group about the past results, group knowledge and insight will be established and in the other word individual learning turns to group learning (Yang, 2004). But organizational learning is a process in which changing the strategies and regularities in an organization lead to improvement of results and desirable outcomes would be obtained. In the other word organizational learning is a process which leads to updating and changing of organizational shared intellectual models (Cho, 2004). Individual learning is an infrastructure for organization learning. It means that individual learning leads to group learning and the later one in turn leads to organizational learning in means that organizational learning points to the individuals learning institutionalization. Collective interaction or group learning is a necessary thing based on this fact. Each individual in a group is considered as an expert and can add his knowledge to other ones' knowledge and also they share their knowledge. Then group can play the role

of mediatory ring between individual and organizational learning (Mehra & Dhawan). Group activities play an important role in turning the individual learning to organizational one and the group learning turns to organizational learning when organizational habits emerge. It means that learning through working turns to notification through working (Bayra Ktara and overestimate short-News, 2003). Organization learns when its employers learn. Of course when employers learn necessarily the organization doesn't learn, it means that by individual learning only the organizational learning wouldn't be achieved, but the grounds for organizational earning can be prepared (Yang, 2004). Since individual learning is an infrastructure for organizational one, Crossun & Inkepen (1992) proposed three following mechanism to turn from individual learning to group (team and organizational) one:

A. individual facilitation: in this mechanism, leader guides the coherence of different mental pictures to make a shared concept. The key role of leader in very important here, and

B. joint facilitation: people cooperate in a shared field sufficiently and by extensive discussions, increase their shared understanding.

C. artificial facilitation: this one is done by changing the managers, formal meetings and intragroup discussions.

Hypotheses:

Main hypothesis:

Thinking capital affects the 5 principles of organizational learning.

Secondary hypothesis:

H1. There is meaningful and positive relationship between human capital and intellectual models.
H2. There is meaningful and positive relationship between human capital and personal skills.
H3. There is meaningful and positive relationship between human capital and systematic thinking.
H4. There is meaningful and positive relationship between human capital and shared insight.
H5. There is meaningful and positive relationship between human capital and group learning.
H6. There is meaningful and positive relationship between structural capital and intellectual models.
H7. There is meaningful and positive relationship between structural capital and personal skills.
H8. There is meaningful and positive relationship between structural capital and systematic thinking.
H9. There is meaningful and positive relationship between structural capital and shared insight.
H10. There is meaningful and positive relationship between structural capital and group learning.
H11. There is meaningful and positive relationship between relational capital and intellectual models.
H12. There is meaningful and positive relationship between relational capital and personal skills.
H13. There is meaningful and positive relationship between relational capital and systematic thinking.
H14. There is meaningful and positive relationship between relational capital and shared insight.
H15. There is meaningful and positive relationship between relational capital and group learning.

Methodology:

In the present research the measurement of result and effectiveness which are coming following a certain phenomenon and attempt are considered, i.e. investigates the effects of thinking capital elements on 5 principles of organizational learning, therefore, the research is descriptive and on the other hand because it evaluates the relationship between 2 different variables or phenomena i.e. investigates the type and amount of relationship between elements of thinking capital and 5 principles of organizational learning during which the type and correlation between them is studied, it can be correlative research too. So the method is descriptive-correlative.

Statistical sample and society:

The society of the research includes all managers, assistant directors and experts and employers of Gas organization in Chahar Mahal and Bakhtiari province which is about 161 individuals. The statistical society of the study includes all managers of Gas organization in Chahar Mahal and Bakhtiari province that based on the statistics reported by the organization, there are 161 managers all over the province working. Among them, 75 individuals were working in gas organization of province and 86 in other province capitals. The number of statistical sample in this study is 142 individuals based on non-probabilistic sampling.

Method of data analysis:

In this research statistical data were collected using questionnaires and encoded using Likert spectrum and then processed using software SPSS and LISREL and deductive and descriptive statistics were used to analyze the data. In descriptive method the statistical tables were used for demographical description and analysis. As a matter of fact, first we examined the variables using descriptive statistics.

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Evaluation of data normality considering the mentioned indexes:

KS statistics were used to examine the normality. Null and against hypotheses are explained as follow.

Null hypothesis: data distribution is normal.

H1. Data distribution is not normal.

Table 1: Normality test (number=142)

Meaningfulness level	(K-S) statistics	indexes
0.232	**1.037**	Organizational learning
0.099	**1.226**	Thinking capital

Considering the normality test results in the table, one can state that because the meaningful level of the test is more than 5% for main research scales (thinking capital and organizational learning) therefore the null hypothesis is not ignored and it means that observation distribution in main research scales is normal. Regarding the fact that that 2 main research scales are normal, so their subscales are normal too.

Deductive statistics (research hypotheses test):

In this section the hypotheses are analyzed using deductive statistics and the attempt was on finding a good answer for research questions regarding to the hypotheses acceptance of ignorance. In this section to evaluate the research hypotheses the correlation test and regression model and meaningful level are used. In the following sections the hypotheses evaluation is done using 2 sample t-test, ANOVA and Freedman tests.

Main hypotheses:

It seems that thinking capital affects the 5 principles of organizational learning:

In one hand there is relationship between thinking capital and organizational learning. Null and against hypotheses are as follow:

H0: thinking capital doesn't affect the 5 principles of organizational learning.

H1. Thinking capital affects the 5 principles of organizational learning.

Table 2: Regression model in evaluation of effects of thinking capital on organizational learning

meaningfulness level (p)	Value of t	Regression coefficient	parameter
0.000	85124	0.64	Intercept
0.001	17.70	0.80	Strategic approach
0.691 = (R^2) Determination coefficient		0.831 = (R) Correlative coefficient	

In the table considering the meaningfulness level, regression coefficient and the fact that $p<0.05$ the null hypothesis is ignored and against one (meaningfulness of regression model) is confirmed and thinking capital affects the organizational learning. By taking the regression coefficient into account for each change in a unit of thinking capital, 0.8 unit of organizational learning would change. Regarding the amount of Pearson correlative coefficient we can state that the relationship is positive (direct) and strong. It means that the more thinking capital is, more organizational learning is resulted. Regarding the determination coefficient we can say that 69.1% of organizational learning changes are caused by the thinking capital variable. The regression model is as follow:

0.64+0.8 (thinking capital) =organizational learning

H2. It seems that there is meaningful and positive relationship between human capital and intellectual models.

Null and against hypotheses are as follow:

H0. There is no meaningful and positive relationship between human capital and intellectual model.

H1. There is meaningful and positive relationship between human capital and intellectual model.

Table 4-9: Regression model for evaluation of human capital impact (independent) on intellectual models (dependent)

Meaningfulness level (P)	Value of t	Regression coefficient	Parameter
0.000	4.33	0.83	Intercept
0.000	12.99	0.74	Human capital
0.546 = (R^2) Determination coefficient		0.739 = (R) Correlative coefficient	

From the table we can say that considering the meaningfulness level of regression coefficient and the fact that $p<0.05$ the null hypothesis is ignored and against hypothesis (meaningfulness of regression model) is confirmed and there is meaningful and positive relationship between human capital and intellectual models. Regarding the regression coefficient for each change in a unit of human capital, 0.74 unit changes in the intellectual models. Regarding the Pearson correlative coefficient we can say that the relationship is positive (direct) and strong. Increasing the human capital lead to increase of intellectual models. Regarding the

determination coefficient we can say that 54.6% of changes in intellectual models caused by the human capitals. The regression model is as follow:

0.83+0.74 (human capital) =intellectual models

H2. It seems that there is meaningful and positive relationship between human capital and personal skills.

Null and against hypotheses are as follow:

H0. There is no meaningful and positive relationship between human capital and personal skills.

H1. There is meaningful and positive relationship between human capital and personal skills.

Table 4-10: Regression model for evaluation of impact of human capital (independent) on personal skills (dependent)

Meaningfulness level (P)	Value of t	Regression coefficient	parameter
0.000	7.40	1.45	Intercept
0.000	10.61	0.62	Human capital
0.446 = **(**R^2**)** Determination coefficient		0.668 = **(R)** Correlative coefficient	

From the table considering the meaningfulness level of regression coefficient and the fact that p<0.05 the null hypothesis is ignores and against hypothesis (meaningfulness of regression model) is confirmed and there is positive and meaningful relationship between human capital and personal skills. Regarding the regression coefficient for each change in a unit of human capital, 0.62 unit changes in the personal skill. Regarding the Pearson correlative coefficient we can say that the relationship is positive (direct) and strong. Increasing the human capital lead to increase of personal skills. Regarding the determination coefficient we can say that 44.6% of changes in personal skills caused by the human capitals. The regression model is as follow:

1.45+0.62 (human capital) = personal skills

H3. It seems that there is meaningful and positive relationship between human capital and systematic thinking.

Null and against hypotheses are as follow:

H0. There is no meaningful and positive relationship between human capital and systematic thinking.

H1. There is meaningful and positive relationship between human capital and systematic thinking.

Table 4-11: Regression model for evaluation of human capital impact (independent) on systematic thinking (dependent)

Meaningfulness level (P)	Value of t	Regression coefficient	parameter
0.000	6.82	1.27	Intercept
0.000	11.6	0.65	Human capital
0.493 = **(**R^2**)** Determination coefficient		0.702 = **(R)** Correlative coefficient	

From the table considering the meaningfulness level of regression coefficient and the fact that p<0.05 the null hypothesis is ignores and against hypothesis (meaningfulness of regression model) is confirmed and there is positive and meaningful relationship between human capital and systematic thinking. Regarding the regression coefficient for each change in a unit of human capital, 0.65 unit changes in the systematic thinking. Regarding the Pearson correlative coefficient we can say that the relationship is positive (direct) and strong. Increasing the human capital lead to increase of systematic thinking. Regarding the determination coefficient we can say that 44.3% of changes in systematic thinking caused by the human capitals. The regression model is as follow:

1.45+0.65 (human capital) =systematic thinking

H4. It seems that there is meaningful and positive relationship between human capital and shared insight.

Null and against hypotheses are as follow:

H0. There is no meaningful and positive relationship between human capital and shared insight.

H1. There is meaningful and positive relationship between human capital and shared insight.

Table 4-11: Regression model for evaluation of human capital impact (independent) on shared insight (dependent)

Meaningfulness level (P)	Value of t	Regression coefficient	parameter
0.000	3.548	0.52	Intercept
0.000	19.21	0.85	Human capital
0.725 = **(**R^2**)** Determination coefficient		0.851 = **(R)** Correlative coefficient	

From the table considering the meaningfulness level of regression coefficient and the fact that p<0.05 the null hypothesis is ignores and against hypothesis (meaningfulness of regression model) is confirmed and there is positive and meaningful relationship between human capital and shared insight. Regarding the regression coefficient for each change in a unit of human capital, 0.85 unit changes in the shared insight. Regarding the Pearson correlative coefficient we can say that the relationship is positive (direct) and strong. Increasing the human capital lead to increase of shared insight. Regarding the determination coefficient we can say that 7.25% of changes in shared insight caused by the human capitals. The regression model is as follow:

0.52+0.85 (human capital) = shared insight

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H5. It seems that there is meaningful and positive relationship between human capital and group learning.

Null and against hypotheses are as follow:

H0. There is no meaningful and positive relationship between human capital and group learning.

H1. There is meaningful and positive relationship between human capital and s group learning.

Table 4-12: Regression model for evaluation of human capital impact (independent) on group learning (dependent)

Meaningfulness level (P)	Value of t	Regression coefficient	parameter
0.000	10.42	1.92	Intercept
0.000	9.3	0.51	Human capital
0.382 = **(**R^2**)** Determination coefficient		0.618 = **(R)** Correlative coefficient	

From the table considering the meaningfulness level of regression coefficient and the fact that p<0.05 the null hypothesis is ignores and against hypothesis (meaningfulness of regression model) is confirmed and there is positive and meaningful relationship between human capital and group learning. Regarding the regression coefficient for each change in a unit of human capital, 0.51 unit changes in the group learning. Regarding the Pearson correlative coefficient we can say that the relationship is positive (direct) and strong. Increasing the human capital lead to increase of group learning. Regarding the determination coefficient we can say that 38.2% of changes in group learning caused by the human capitals. The regression model is as follow:

1.9+0.51 (human capital) = group learning

H6. It seems that there is meaningful and positive relationship between structural capital and intellectual models.

Null and against hypotheses are as follow:

H0. There is no meaningful and positive relationship between structural capital and intellectual models.

H1. There is meaningful and positive relationship between structural capital and s intellectual models.

Table 4-12: Regression model for evaluation of structural capital impact (independent) on intellectual models (dependent)

Meaningfulness level (P)	Value of t	Regression coefficient	parameter
0.000	4.33	1.13	Intercept
0.000	8.28	0.65	Structural capital
0.329 = **(**R^2**)** Determination coefficient		0.573 = **(R)** Correlative coefficient	

From the table considering the meaningfulness level of regression coefficient and the fact that p<0.05 the null hypothesis is ignores and against hypothesis (meaningfulness of regression model) is confirmed and there is positive and meaningful relationship between structural capital and intellectual models. Regarding the regression coefficient for each change in a unit of structural capital, 0.65 unit changes in the intellectual models. Regarding the Pearson correlative coefficient we can say that the relationship is positive (direct) and strong. Increasing the structural capital lead to increase of intellectual models. Regarding the determination coefficient we can say that 32.9% of changes in intellectual models caused by the structural capitals. The regression model is as follow:

1.13+0.65 (Structural capital) = intellectual models

H7. It seems that there is meaningful and positive relationship between structural capital and personal skills.

Null and against hypotheses are as follow:

H0. There is no meaningful and positive relationship between structural capital and personal skills.

H1. There is meaningful and positive relationship between structural capital and s personal skills.

Table 4-12: Regression model for evaluation of structural capital impact (independent) on personal skills (dependent)

Meaningfulness level (P)	Value of t	Regression coefficient	parameter
0.000	6.44	1.58	Intercept
0.000	7.87	0.58	Structural capital
0.307 = **(**R^2**)** Determination coefficient		0.554 = **(R)** Correlative coefficient	

From the table considering the meaningfulness level of regression coefficient and the fact that p<0.05 the null hypothesis is ignores and against hypothesis (meaningfulness of regression model) is confirmed and there is positive and meaningful relationship between structural capital and personal skills. Regarding the regression coefficient for each change in a unit of structural capital, 0.65 unit changes in the personal skills. Regarding the Pearson correlative coefficient we can say that the relationship is positive (direct) and strong. Increasing the structural capital lead to increase of personal skills. Regarding the determination coefficient we can say that 32.9% of changes in personal skills caused by the structural capitals. The regression model is as follow:

1.58+0.58 (Structural capital) = personal skills

H8. It seems that there is meaningful and positive relationship between structural capital and systematic thinking.

Null and against hypotheses are as follow:

H0. There is no meaningful and positive relationship between structural capital and systematic thinking.

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H1. There is meaningful and positive relationship between structural capital and s systematic thinking.

Table 4-12: Regression model for evaluation of structural capital impact (independent) on systematic thinking. (Dependent)

Meaningfulness level (P)	Value of t	Regression coefficient	parameter
0.000	7.32	1.94	Intercept
0.000	5.54	0.44	Structural capital
0.180 = **(**R^2**)** Determination coefficient		0.424 = **(R)** Correlative coefficient	

From the table considering the meaningfulness level of regression coefficient and the fact that $p<0.05$ the null hypothesis is ignores and against hypothesis (meaningfulness of regression model) is confirmed and there is positive and meaningful relationship between structural capital and systematic thinking. Regarding the regression coefficient for each change in a unit of structural capital, 0.65 unit changes in the systematic thinking. Regarding the Pearson correlative coefficient we can say that the relationship is positive (direct) and strong. Increasing the structural capital lead to increase of systematic thinking. Regarding the determination coefficient we can say that 32.9% of changes in systematic thinking caused by the structural capitals. The regression model is as follow:

1.94+0.44 (Structural capital) = systematic thinking

H9. It seems that there is meaningful and positive relationship between structural capital and shared insight.

Null and against hypotheses are as follow:

H0. There is no meaningful and positive relationship between structural capital and shared insight.

H1. There is meaningful and positive relationship between structural capital and s shared insight.

Table 4-12: Regression model for evaluation of structural capital impact (independent) on shared insight (Dependent)

Meaningfulness level (P)	Value of t	Regression coefficient	parameter
0.007	2.73	0.58	Intercept
0.000	13.03	0.83	Structural capital
0.55 = **(**R^2**)** Determination coefficient		0.74 = **(R)** Correlative coefficient	

From the table considering the meaningfulness level of regression coefficient and the fact that $p<0.05$ the null hypothesis is ignores and against hypothesis (meaningfulness of regression model) is confirmed and there is positive and meaningful relationship between structural capital and shared insight. Regarding the regression coefficient for each change in a unit of structural capital, 0.83 unit changes in the shared insight. Regarding the Pearson correlative coefficient we can say that the relationship is positive (direct) and strong. Increasing the structural capital lead to increase of shared insight. Regarding the determination coefficient we can say that 55% of changes in shared insight caused by the structural capitals. The regression model is as follow:

0.58+0.83(Structural capital) = shared insight

H10. It seems that there is meaningful and positive relationship between structural capital and group learning.

Null and against hypotheses are as follow:

H0. There is no meaningful and positive relationship between structural capital and group learning.

H1. There is meaningful and positive relationship between structural capital and s group learning.

Table 4-13: Regression model for evaluation of structural capital impact (independent) on group learning (Dependent)

Meaningfulness level (P)	Value of t	Regression coefficient	parameter
0.000	8.09	1.62	Intercept
0.000	10.03	0.61	Structural capital
0.418 = **(**R^2**)** Determination coefficient		0.647 = **(R)** Correlative coefficient	

From the table considering the meaningfulness level of regression coefficient and the fact that $p<0.05$ the null hypothesis is ignores and against hypothesis (meaningfulness of regression model) is confirmed and there is positive and meaningful relationship between structural capital and group learning. Regarding the regression coefficient for each change in a unit of structural capital, 0.61 unit changes in the group learning. Regarding the Pearson correlative coefficient we can say that the relationship is positive (direct) and strong. Increasing the structural capital lead to increase of group learning. Regarding the determination coefficient we can say that 41.8% of changes in group learning caused by the structural capitals. The regression model is as follow:

1.62+0.61 (Structural capital) = group learning

H11. It seems that there is meaningful and positive relationship between relational capital and intellectual models.

Null and against hypotheses are as follow:

H0. There is no meaningful and positive relationship between relational capital and intellectual models.

H1. There is meaningful and positive relationship between relational capital and s intellectual models.

Table 4-14: Regression model for evaluation of relational capital impact (independent) on intellectual models (Dependent)

Meaningfulness level (P)	Value of t	Regression coefficient	parameter
0.000	2.75	0.998	Intercept
0.000	6.23	0.63	Relational capital
0.217 = **(R^2)** Determination coefficient		0.466 = **(R)** Correlative coefficient	

From the table considering the meaningfulness level of regression coefficient and the fact that p<0.05 the null hypothesis is ignores and against hypothesis (meaningfulness of regression model) is confirmed and there is positive and meaningful relationship between relational capital and intellectual models. Regarding the regression coefficient for each change in a unit of relational capital, 0.61 unit changes in the intellectual models. Regarding the Pearson correlative coefficient we can say that the relationship is positive (direct) and strong. Increasing the relational capital lead to increase of intellectual models. Regarding the determination coefficient we can say that 41.8% of changes in intellectual models caused by the relational capitals. The regression model is as follow:

0.998+0.63 (relational capital) = intellectual models

H12. It seems that there is meaningful and positive relationship between relational capital and personal skills.

Null and against hypotheses are as follow:

H0. There is no meaningful and positive relationship between relational capital and personal skills.

H1. There is meaningful and positive relationship between relational capital and s personal skills.

Table 4-15: Regression model for evaluation of relational capital impact (independent) on personal skills (Dependent)

Meaningfulness level (P)	Value of t	Regression coefficient	parameter
0.000	4.17	1.41	Intercept
0.000	6.17	0.58	Relational capital
0.214 = **(R^2)** Determination coefficient		0.463 = **(R)** Correlative coefficient	

From the table considering the meaningfulness level of regression coefficient and the fact that p<0.05 the null hypothesis is ignores and against hypothesis (meaningfulness of regression model) is confirmed and there is positive and meaningful relationship between relational capital and personal skills. Regarding the regression coefficient for each change in a unit of relational capital, 0.58 unit changes in the personal skills. Regarding the Pearson correlative coefficient we can say that the relationship is positive (direct) and strong. Increasing the relational capital lead to increase of personal skills. Regarding the determination coefficient we can say that 21.4% of changes in personal skills caused by the relational capitals. The regression model is as follow:

1.41++0.58 (relational capital) = personal skills

H13. It seems that there is meaningful and positive relationship between relational capital and systematic thinking.

Null and against hypotheses are as follow:

H0. There is no meaningful and positive relationship between relational capital and systematic thinking.

H1. There is meaningful and positive relationship between relational capital and s systematic thinking.

Table 4-16: Regression model for evaluation of relational capital impact (independent) on systematic thinking (Dependent)

Meaningfulness level (P)	Value of t	Regression coefficient	parameter
0.000	4.86	1.71	Intercept
0.000	4.84	0.48	Relational capital
0.143 = **(R^2)** Determination coefficient		0.378 = **(R)** Correlative coefficient	

From the table considering the meaningfulness level of regression coefficient and the fact that p<0.05 the null hypothesis is ignores and against hypothesis (meaningfulness of regression model) is confirmed and there is positive and meaningful relationship between relational capital and systematic thinking. Regarding the regression coefficient for each change in a unit of relational capital, 0.48 unit changes in the systematic thinking. Regarding the Pearson correlative coefficient we can say that the relationship is positive (direct) and strong. Increasing the relational capital lead to increase of systematic thinking. Regarding the determination coefficient we can say that 14.3% of changes in systematic thinking caused by the relational capitals. The regression model is as follow:

1.71++0.48 (relational capital) = systematic thinking

H14. It seems that there is meaningful and positive relationship between relational capital and shared insight.

Null and against hypotheses are as follow:

H0. There is no meaningful and positive relationship between relational capital and shared insight.

H1. There is meaningful and positive relationship between relational capital and s shared insight.

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Table 4-17: Regression model for evaluation of relational capital impact (independent) on shared insight (Dependent)

Meaningfulness level (P)	Value of t	Regression coefficient	parameter
0.111	1.60	0.54	Intercept
0.000	8.331	0.78	Relational capital
0.331 = **(R^2)** Determination coefficient		0.576 = **(R)** Correlative coefficient	

From the table considering the meaningfulness level of regression coefficient and the fact that p<0.05 the null hypothesis is ignores and against hypothesis (meaningfulness of regression model) is confirmed and there is positive and meaningful relationship between relational capital and shared insight. Regarding the regression coefficient for each change in a unit of relational capital, 0.78 unit changes in the shared insight. Regarding the Pearson correlative coefficient we can say that the relationship is positive (direct) and strong. Increasing the relational capital lead to increase of shared insight. Regarding the determination coefficient we can say that 33.1% of changes in shared insight caused by the relational capitals. The regression model is as follow:

0.78 (relational capital) =Shared insight

H15. It seems that there is meaningful and positive relationship between relational capital and group learning.

Null and against hypotheses are as follow:

H0. There is no meaningful and positive relationship between relational capital and group learning.

H1. There is meaningful and positive relationship between relational capital and s group learning.

Table 4-18: Regression model for evaluation of relational capital impact (independent) on group learning (Dependent)

Meaningfulness level (P)	Value of t	Regression coefficient	parameter
0.000	5.09	1.46	Intercept
0.000	7.50	0.60	Relational capital
0.287 = **(R^2)** Determination coefficient		0.535 = **(R)** Correlative coefficient	

From the table considering the meaningfulness level of regression coefficient and the fact that p<0.05 the null hypothesis is ignores and against hypothesis (meaningfulness of regression model) is confirmed and there is positive and meaningful relationship between relational capital and group learning. Regarding the regression coefficient for each change in a unit of relational capital, 0.60 unit changes in the group learning. Regarding the Pearson correlative coefficient we can say that the relationship is positive (direct) and strong. Increasing the relational capital lead to increase of group learning. Regarding the determination coefficient we can say that 28.7% of changes in group learning caused by the relational capitals. The regression model is as follow:

1.46+0.60 (relational capital) =group learning

First degree confirming factor analysis:

To evaluate confirmatively the main model as well as hypotheses, using factor analysis, the measurability of research variables by questionnaires also impact of conceptual independent variables on dependent variables, the structural equations model is examined. Evaluation model form resulted from confirming factor analysis is shoed using LISREL based on the questionnaires.

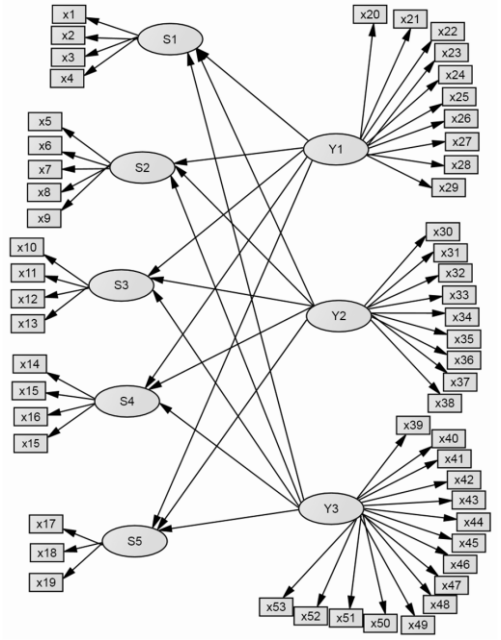

Fig. 3: Model factor analysis

The results of structural equations by LISREL show that the value of RMSEA is 0.076 and because this is a small value (less than 0.08) the model have minimal error. Also KAY quadrate with the value of 16.12 and degree of freedom of 8 and meaningfulness level of 0.221 shows that the mentioned model is consistent with diffraction pattern between observed variables (we can say that the value of KAY-DO on 2.02 degree of freedom and less than 2.5 and also it shows the fitness of model). Fitness index (GIF) is also 0.91 and is approaching to 1. The Root mean square residual index (RMR) is also equal to 0.054 and is a small value which explains the acceptable fitness. Values of AGFI and PGFI are also 0.90 and 0.88 respectively and are approaching to 1. We can say that the model has acceptable fitness.

Table 4-28: Results of factor analysis and structural equations model (number=142)

result	Meaningfulness level (P)	Statistics t	Impact coefficient	Paths in model (hypotheses)
confirmed	**0.000**	**8.28**	**0.694**	Human capital (s1) on intellectual models (y_1)
confirmed	**0.000**	**6.17**	**0.529**	Human capital (s_1) on personal skills (y_2)
confirmed	**0.000**	**9.86**	**0.790**	Human capital (s_1) on systematic thinking (y_3)
confirmed	**0.000**	**10.88**	**0.667**	Human capital (s_1) on shared insight (y_4)
confirmed	**0.000**	**3.38**	**0.255**	Human capital (s_1) on group learning (y_5)
confirmed	**0.004**	**2.379**	**0.42**	Structural capital (s_2) on intellectual models (y_1)
confirmed	**0.012**	**2.22**	**0.25**	Structural capital (s_2) on personal skills (y_2)
confirmed	**0.002**	**3.16**	**0.338**	Structural capital (s_2) on systematic thinking (y_3)
confirmed	**0.001**	**3.09**	**0.271**	Structural capital (s_2) on shared insight (y_4)
confirmed	**0.007**	**2.758**	**0.277**	Structural capital (s_2) on group learning (y_5)
confirmed	**0.025**	**1.95**	**0.293**	Relational capital (s_3) on intellectual models (y_1)
confirmed	**0.024**	**1.98**	**0.303**	Relational capital (s_3) on personal skills (y_2)
confirmed	**0.015**	**2.121**	**0.312**	Relational capital (s_3) on systematic thinking (y_3)
confirmed	**0.000**	**3.40**	**0.284**	Relational capital (s_3) on shared insight (y_4)
confirmed	**0.000**	**3.14**	**0.301**	Relational capital (s_3) on group learning (y_5)

Impact coefficient of independent variables on dependent ones of structural equations model are presented ion table 4-28. All paths in error level of 5% are meaningful. The maximum impact with value of 0.79 is related to human capital (s_1) on systematic thinking (y_3) and the lowest impact with value of 0.25 is related to human capital (s_1) on personal skills (y_2). The results confirm the research hypotheses via factor analysis and structural equations models.

REFERENCES

Abolalaie, Behzad, Abbas Ghafari, 1385. human capital of organizations' competition advantage in globalization.

Azar Adel and Mansour Momeni, 1384. Statistics and its applications in management, Tehran, SAMT publication.

Behnami, Jousef, 1384. organizational learning, Monthly publication of Tadbir, 161.

Delavar, Ali, 1380. statistical tests application in behavioral studies, Arasbaran Publication, first prss.

Faghihi Farahmand, Naser, 1381. dynamic organizational management, Tabriz, Frist press.

Hafez nia, Mohammadreza, 1380. research methodology in human science, Tehran, SAMT publication.

Iran nejad Parizi, Mehdi, 1388. research methodology in social sciences, management, economy, accounting, political science, psychology, social sciences, Tehran, Modiran, second edition.

Isaie, social and thinking capitals, 1386. management of human resources studies and development of efficiency, Saipa Co. 1386.

Khaki, Gholamreza, 1387. research methodology for thesis writing, Tehran, Drayat publication.

Khavand kar, jalil, khavand kar Ehsan and Afshin motaghi, 1388. thinking capital, management, development, examination model, Tehran, CEIR I.R.I

Liff, odinson, 1386. thinking capital management, translated by Misagh translation group, modiran misagh ,agazine, no. 22.

Rading, Alen, 1383. knowledge management, succession in world economy based on information, translated by mohammad hossein lotfi, Tehran, Samt publication, first press.

Sarlak, mohammad ali, Hasan Forati, 1387. informational systems of advanced management, Tehran, PNU.

Journal of Applied Science and Agriculture, 9(2) February 2014, Pages: 594-604

Sarmad, Zohre, Abbas Bazargan, Alahe Hejazi, 1388. research methodology in behavioral sciences, Tehran, Agah publication, 15th press.

Sokaran Oma, 1384. research methodology in management, translated by Mohammad Saebi and Mahmood Shirazi, higher complex of management and programming education and research, 3rd press.

Zanjir dar, Majid, Ali Kohan and Ali Akbar Soltan Zadeh, 1386. measurement management and report of thinking capital, monthly publication of chamber of commerce, No. 10 and 11.